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A MODEL INFORMATION SYSTEM FOR THE ADULT EDUCATION PROFESSION.

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A MODEL OF INFORMATION SERVICES FOR THE ADULT EDUCATION PROFESSION PROVIDES FOR--(1) ACCESS TO THE LITERATURE THROUGH BIBLIOGRAPHIES, REVIEWS, AND MECHANIZED RETRIEVAL, (2) PHYSICAL ACCESS (MAINLY IN MICROFORM), (3) SPECIALIZED INFORMATION SERVICES LINKED WITH ONE ANOTHER AND THE ERIC CLEARINGHOUSE ON ADULT EDUCATION, (4) COORDINATION, RESEARCH, AND TRAINING FOR ADULT EDUCATORS AND INFORMATION SERVICE PROFESSIONALS, (5) IMPROVED MEANS OF HANDLING SUCH SPECIAL DOCUMENTS AS CURRICULUM MATERIALS AND AIDS, FOREIGN LANGUAGE DOCUMENTS, PROGRAM INFORMATION, AND HISTORICAL AND ARCHIVAL MATERIALS, AND (6) FINANCIAL SUPPORT, PROBABLY BY THE FEDERAL GOVERNMENT. THE ERIC CLEARINGHOUSE ON ADULT EDUCATION PROVIDES SOME ELEMENTS OF THIS MODEL SYSTEM, IN ACQUIRING, PROCESSING, AND DISSEMINATING INFORMATION ABOUT CURRENT DOCUMENTS. THE NEXT STEP IS TO INVOLVE MANY AGENCIES AND PERSONS IN PROVIDING RETROSPECTIVE BIBLIOGRAPHIES, REVIEWS AND INTERPRETATIONS OF RESEARCH, AND INTERPRETATIVE ESSAYS. ERIC/AE HAS A LARGE AND GROWING COLLECTION OF DOCUMENTS, ABSTRACTED AND DEEPLY INDEXED, WHICH COULD BE A USEFUL RESOURCE. (LY)

ERIC CLEARINGHOUSE ON ADULT EDUCATION
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Presentation to

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Chicago, Illinois

12 February, 1968

A MODEL INFORMATION SYSTEM FOR THE ADULT EDUCATION PROFESSION

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For three years the problems of adult education information services have been under study at the Library of Continuing Education of Syracuse University and at the ERIC Clearinghouse on Adult Education, supported by the Cooperative Research Program and the Educational Resources Information Center of the U.S. Office of Education and by Syracuse University.

I would like to share with you some results of this work in the form of an outline for a model information system which might be developed in the coming decade. And, since the ERIC Clearinghouse on Adult Education (ERIC/AE), presently operational at Syracuse University, has as one of its major goals "to help consolidate the growing body of tested knowledge which leads to long-range improvement of adult education practice," I would like to suggest some specific ways in which such a large central information center can be helpful to the research community it serves. Particularly, I will examine the need for substantive reviews of adult education literature and the resources ERIC/AE can provide to you in the preparation of such reviews.

Such a center will be a meager thing, indeed, if it only "serves" its users. So let me challenge you to think with us at ERIC/AE about how we, with your help, can make the ERIC Clearinghouse an integral part of the community of scholarship and research in adult education. As our ERIC services develop, we--librarians, documentalists, information scientists, or whatever we may be called--who operate the Clearinghouse, will have many ideas and suggestions; but we expect that you active researchers will find information handling problems an absorbing area of investigation, and hope that you will yourselves initiate many of the Clearinghouse activities of the future.

Let us first look at the proposed model information system to remind ourselves that an ERIC Clearinghouse is no potential panacea for all the information transfer problems which ramify throughout an emerging profession, affecting every person and every agency in the field.

Here is a section from the report of our study project.

A MODEL INFORMATION SYSTEM

Staff members of the project believe some suggestions can be made to the adult education profession for improving some parts of its information system, particularly those in which books, periodicals, films, recordings or other "graphic records" are the most efficient tools. For this purpose, we outline in this section a "model" information system to serve adult educators. By "model" we mean ideal or desirable, in the sense of a goal toward which we should work. We will not, however, casually recommend that all adult educators install computers and become, overnight, members of the on-line intellectual community of the future. Nor will we parade before the profession an array of devices and esoteric techniques which the information sciences can even now bring to bear on some information problems. Instead, we will outline the types of services the profession should, in fact, be able to attain by well-directed effort over a period of the next ten years.

The term "model" is appropriate in another sense, for some of our suggestions are adaptations of information services operating in more mature professional fields and some are adaptations of techniques from well-developed systems in science and technology.

In addition to the technical work described in this Report, project staff, in the past 29 months, have consulted with many people, seeking to understand the whole gamut of information problems. This experience has enabled us to identify and consider problem areas other than those we were charged to study directly. We will comment on publication problems, the role of personal communication, the importance of improved statistical reporting, and the growth of organized programs of innovation, which integrate many communication methods into purposeful efforts toward educational change. We do not believe that better bibliographic organization is a magic cure-all for the complex communication problems of the profession.

Nonetheless, our central focus has been on planning for greatly improved use of the literature of the field through the development of services to help adult educators find out what has been written on their subjects of interest, to help them obtain the documents themselves, and to provide other specialized information services.

Aspects of the model system are grouped below in two parts: Context for a Model System; and A Model System.

A. Context of a Model System.

1. Range of Information Needs.

If we could make a series of case studies of typical adult education workers, in which we observed the actual work they do and noted systematically the information they need to do it well, we would see that these infinitely various needs can be analyzed into patterns that constantly recur throughout the profession. Some of these needs are specific and unique to the particular agency or locality, requiring improved reporting or data collection within a particular organization, or calling for better personal communication with key persons. Others may be related to a locality in which several adult education agencies are at work. Again, some of these requirements will be unique, relating to the geist of a particular institution and its style of involvement with its community. But some needs will be held in common by several agencies; for example, the need for census tract data or manpower need projections.

Finally, many similar information needs are present in any adult education agency, however, as it plans its programs, using any format or method, for any group of adults. These shared needs relating to the characteristics of adults as learners, to the processes of program planning and evaluation, to the teaching methods, devices and materials suited to adults and to the organization, finance and development of adult education, form the core of knowledge and common interest underlying the emerging adult education profession. These are the needs which can be met, in part, by improved information services which maximize the use of knowledge and experience conveyed through publications, films, tapes and other graphic records.

It is apparent, however, that all possible communication channels, including many not yet clearly understood, must be used if the information needs of the field are to be met. In the elements of a model system sketched in Part B below, all adult education agencies, local, national and international, must play an appropriate part, for each will have a set of users with which it works in closest association, whose problems it understands best, and to whom it has the most effective communication channels.

2. Planning and Facilitating Change in Adult Education.

We may anticipate in the coming decade a great increase in conscious efforts to develop planned programs of educational change in adult education. We see now an example of this in the federally supported efforts to develop adult basic education, involving universities, public school systems, state departments of education and other agencies, in a purposeful program exploiting the particular capacities of each, supported by research, demonstration, and special information services as required.

Other efforts of this type can be seen at various levels of the field, emanating from a number of the national associations serving the field. Their key characteristic is the use of a wide range of information exchange techniques integrated into purposeful efforts to effect innovation in educational systems. They are often based on "systems analysis," intended to focus the entire program from research to practice on some visible, even measurable, change in the intended target group. In these efforts an array of methods pioneered by adult educators themselves are often used--conferences, workshops, organized information campaigns, demonstrations of best practice, the use of special resource persons, and many others. Such efforts present a splendid opportunity to bring the use of publications and graphic records of all kinds into their most useful relationship with other techniques for effecting change.

3. Personal Communication.

Some information needs can only be met through one or another form of personal communication. Webs of personal contacts exist in adult education as they do in all professions. We have not been able to study these personal communication processes directly, but a little is known of their workings in other professions. It has been well established, for example, that the researchers most active in a particular area will almost invariably be in close personal communication, and we know that agency administrators and others use this method for similar purposes when they share common interests.

Some interesting questions may be raised for speculation or possible study. Are these webs typically based on some identifiable factors, perhaps personal (old school ties) or institutional (perception of "model" neighboring institution)? Are they functional in supplementing other information channels, or are they, in effect, power concentrations maintained by excluding others from the shared information? Is there any way, short of wiretapping, to siphon out some of the content of this communication for wider use?

4. Data Handling and Statistical Reporting.

Much information needed in any organization is derived from internal reporting systems, which, following their use in business and other parts of education, have in some adult education agencies been well thought out and mechanized. Some parts of these data may be of wider interest and could be merged into common data banks. We can cite the collection of data on conferences and institutes at the University of Chicago and Wayne State University.[1] Another example has been provided by the work of the AUEC-NUEA Joint Committee on Minimum Data to establish meaningful definitions and procedures for reporting by their member institutions in cooperation with the statistical reporting units of the U.S. Office of Education.

Many more efforts of this type may be expected in the coming years, and attention to the formation of central data banks as important information sources should begin.

5. Publication.

Though it has not been our purposes during this project to study the problems of rationalizing and improving publication in adult education, some comments, predictions and suggestions may be made, especially as they bear on making the intellectual content of the publications more easily accessible.

During the project period, publication of all kinds has increased and will continue to increase for the various reasons mentioned in Section II. In this period, several new periodicals were founded and several newsletter-like publications grew into periodicals or journals. Periodical-like publications form an obvious vehicle to handle many information needs which are shared by enough people to make it economical.

Since the bulk of publication is proliferating rapidly, some simple recommendations to authors, editors and publishers may make their work more accessible to users. These recommendations are: (1) wherever appropriate, title and chapter headings should precisely indicate the content of the document; (2) a subject index should be prepared; and (3) careful abstracts of the whole document and each major subsection or chapter of the work should be included within the document.

Much publication actively is grossly uneconomical. It is easy to see, for example, that if a journal issue containing 15 articles is published, and only one or two of the articles are read or even scanned by the average subscriber, publication is wasteful if viewed only as a means of bringing printed material to appropriate users. The development of microforms and other new small-edition publishing techniques have led in recent years to the introduction of various alternatives to journal publication. Since journals and other publications serve many purposes in addition to the ostensible one of conveying information, decisions on forms of publication cannot be made solely on the basis of their efficiency for that purpose. If we look a decade hence, however, the proliferation of the types of publications now so familiar may begin to taper off. In the meantime, more careful monitoring of the flow of publications by type, by subject, and by intended audience may indicate areas not yet being served and areas where wasteful duplication and redundancy are setting in. Monitoring of this type may be possible in a centralized information center which handles a large document flow.

B. A Model System.

1. Access to the Content of the Literature.

A system is required, and our studies indicate that it is clearly feasible, for improving access to the subject content of adult education publications. Far better tools are needed to enable the adult educator to determine quickly, easily, and inexpensively what has been published on the subject or problem of interest to him.

The first requirement is a regular listing of current publications, with enough analysis of their contents to allow the user to judge accurately their relevance to his interests. Though this service should be somewhat selective, it should be reasonably comprehensive, since the nature of the relationship between user and document, which makes the document relevant or meaningful, is not well understood. If possible, this current listing, whether published in one unit or separate sections, should cumulate periodically, or at least have cumulative author and subject indexes. Our investigations demonstrate that the acquisitions programs, indexing techniques and other procedures for such service are available now and that the volume of literature to be monitored is manageable.

This initial listing is the instrumental first step which makes possible the preparation of other types of content access tools which are now enormously expensive and difficult to compile. These may include comprehensive or selective bibliographies on particular subjects, evaluative reviews of the literature by subject, annual research reviews or overviews of developments in various parts of the field and, finally, comprehensive state-of-the-art reviews which summarize what is presently known and point to new directions for research and development. These review publications may be prepared on any subject and from the viewpoint of any part of the audience of adult educators and would lead, for example, to updating and routine maintenance of such works as the Brunner Overview of Adult Education Research.[2] They might be prepared by a central information center working in cooperation with subject experts, by a wide variety of national and governmental organizations which serve the field, or by expert individuals.

When such a system has been developed, particularly if it is computer aided, other services can be derived and tailored to fit the particular needs of key individuals and agencies. Various forms of these services, known as selective dissemination of information, are currently operational in other fields and could quickly be adapted to adult education. They provide for immediate notification to the user of any document entering the system which matches the profile of interests he has specified. They provide, in addition, for routine updating of the interest profile and monitoring of each individual's use of the system.

Finally, as the number of documents in the information system grows ever larger, a mechanized retrieval service is needed

for searching large document files on the basis of thorough and detailed indexing of their content. We have examined many aspects of the intellectual and mechanical problems of such retrieval systems and believe such service feasible. The key intellectual tools required are the techniques of bibliographic citation, abstracting, and indexing described in this Report. These tools, including a body of controlled indexing vocabulary, are available, though much additional work is needed to perfect them.

Since these retrieval services are expensive, requiring large initial investments of time and money, they should be developed incrementally and designed to serve specific user needs. Some needs may be met by searching large document files for specific subjects or combinations of subjects, based upon accurate and deep indexing of the information content of the files.

These and other retrieval techniques may be exploited also in the preparation of special bibliographies and other publications. In addition, once such a system is fully operational, it may easily be replicated and routinely updated for use in any agency where suitable computer equipment is available. Thus, the data bank could be used by local service agencies where the volume of material and searches dictated. Various parts of the files containing particular subject areas or regional data can also be stripped off for more efficient local searching. In short, the operation of such a system may begin in a central information center, but its use may not require centralization, for it can be made operational in many locations, once the programs and data files are developed in machine manipulatable form.

2. Physical Access.

Once a publication is known to exist, how may it be provided most easily and inexpensively to a user who needs it?

Part of this provision comes, of course, from the publications which each adult educator routinely obtains as a subscriber to journals and newsletters or as part of his membership in professional associations.

Another part of the answer will involve the provision of documents from a central source either in hard copy reproductions or in other media, such as the microfilmed dissertations now available from University Microfilms, or the microfiche disseminated by ERIC and other federally-supported information systems. While hard copy reproductions still cost about four cents a page, making them usually more costly than the original publications, this cost may in time be reduced and maintain the availability of "out-of-print" material. Microforms reduce document production and dissemination costs drastically and allow compact storage of large collections. Catalogs and indexes prepared by computers in a central information service may then

serve as a guide to the local microform documents.

Such services can make document access in many adult education agencies very much more efficient and less costly, since the costs of original acquisition, cataloging and analysis are done only once. The burden of these costs has made these agencies reluctant in the past to undertake library services to their clientele. We may expect in the next decade to see such collections tailored to their individual needs, requiring only desk drawer storage and a compact, inexpensive microform reader.

Still, copyright restrictions and other obstacles will keep some parts of the essential literature from being available in microform. Many persons will continue to prefer printed books and other familiar or convenient publication forms at a price. Thus, adult education collections will still be required in local staff libraries, in public and university libraries and in many of the supporting agencies, in the foreseeable future. Even this work, however, will benefit immeasurably from the regular current indexes and other content access services which have been suggested above.

3. Specialized Information Services.

Despite the development of tools for access to information, or in part because of the increased amount of information they will make available, there will be a corresponding need for highly specialized and personalized information services. These should be located in many of the existing national organizations serving special interest groups and in such agencies as state departments of education, state and regional adult education associations, the Title III resource centers and in the twenty regional laboratories being developed with U.S. Office of Education support throughout the country. These information centers should support the programs of their sponsoring agencies and should provide many kinds of services designed especially for the particular clients of these agencies. The information officers manning them should be professional staff members of the agencies, involved in all aspects of the work of the agencies. These professionals must be thoroughly familiar with the practical problems and daily tasks of their users, so that they can mediate effectively between the user and the information sources and tools which may be brought to bear on the work of the user. They can also collect documents which would otherwise go unnoticed, and they will be in key positions to contribute to literature analysis and interpretive reviews.

A possible model for such a center has recently emerged in the National Association for Public School Adult Education (NAPSAE) Adult Education Clearinghouse, established to provide public school adult educators with many of the services described above. It works in close collaboration with the ERIC Clearinghouse on Adult Education, so that the particular strengths of the two services powerfully reinforce each other. A similar cooperative effort is developing

in the Adult Education Association in its Latin American Clearinghouse and other information services as well. We intend to promote more of these services in other parts of the field. The long-range result may be a series of information service centers working in collaboration with each other and with the ERIC Clearinghouse on Adult Education, which in turn will link them to the resources of the ERIC network.

4. Coordination, Research and Training in Information Services.

A cadre of persons expert in the development of information services should be trained to give aid to agencies which need advice in establishing or improving their own information services. This cadre should be staff associates in a center which might serve in addition as an informal clearinghouse for coordination and collaborative planning of new services.

Research is needed in all aspects of information services; it should grow, in part, as a by-product of the operating services themselves, for many analytical procedures for monitoring the flow of publication in parts of the field and for studying use or reaction to the services, can be built directly into the system to provide research data. Thus, user feedback in various forms can constantly improve the system and lead to new data useful to the field. In addition, there are a wide array of studies which could profitably be undertaken on user needs, refinements in indexing vocabularies, comparative studies of methods of subject analysis and retrieval, and the evaluation of information services in adult education.

Training needs to be established for two purposes. First, the working adult educator, especially the entering professional, needs introduction to many new information services and techniques, since his ability to use these tools easily will make his work more effective throughout his career. Some of this training can be built into the academic programs now preparing the adult education specialist of the future. Students should be introduced to services such as ERIC, the Scientific Information Exchange, the National Referral Service and similar services in other academic fields on which they will draw throughout their professional lives. They should know how coordinate indexing systems operate, how to use information access tools, and should reflect on how information analysis can be made an integral part of research and development of the field.

Similar training of a practical nature should be given in workshops and demonstrations to practicing adult educators so that the use of new services and the information they provide can be translated into their work.

Training programs are needed also for the professionals who will in the future devote their careers to information work.

In-service training programs can be developed in existing information centers, while in a growing number of universities training in all aspects of information science is available which might easily be incorporated into the academic programs of adult education students as well.

5. Handling Special Types of Materials.

Information needs of great urgency require special provision which must be developed in the coming years. Some of these needs may be mentioned with brief comment on how services might be provided.

a. Curriculum Materials and Aids. As the number of textbooks and other materials especially designed for use in adult education mounts in such fields as adult basic education and industrial training, some means must be found to provide meaningful description and evaluation of them. Mechanized procedures are available which can easily and economically keep information on these materials up to date and produce lists or other summary compilations tailored to almost any need.

The problem requiring research and investigation lies in the analysis of these materials. What is a meaningful description, and how can a standard summary description similar to an abstract be prepared? Small investigations in adult basic education or another circumscribed part of the field could develop such descriptive procedures. A simple and inexpensive service could then be established to provide systematic acquisition, analysis, and dissemination. When information from objective evaluation based on actual measures of learning is available, it could be incorporated into the system.

b. Foreign Language Documents. Most persons entering the profession today will spend some of their work lives in a foreign country. In addition, there is much for us to learn in the experience of our foreign colleagues and in the growing interest in comparative adult education. It is urgent that adult education now begins to build comprehensive collections of foreign literature and to incorporate it routinely into our information services.

Since such collecting is difficult and expensive, it probably should be concentrated in one or a limited number of locations, with an agreed-upon division of labor, similar to the Farmington Plan in university libraries.

Translation is the other obvious problem. Until it can be solved, foreign language publications should be included in bibliographies and other information services at whatever depth is feasible, if it be nothing more than translation of the title. Much can be accomplished, we believe, by urging foreign colleagues to prepare English abstracts or summaries. Are we prepared to provide similar aids in their languages? Eventually,

we hope and expect that it will be recognized as in the national interest to establish large acquisition and translation programs in education using government funds, as is presently the case in many scientific and technical fields.

Literal translation is only one part of the problem. The other is accustoming ourselves to use the concepts prevalent in adult education in other parts of the world and to relate them meaningfully to our own ways of thinking. Specifically, this means structuring these concepts into our indexing vocabularies, so that they are available in the analysis of documents.

c. Historical and Archival Material. Many special provisions should be made for the preservation of materials which have archival and historical significance. Some of this might well be done on a sampling basis and, perhaps, in microform. An excellent beginning has been made on this work at the Library of Continuing Education of Syracuse University, which presently houses the archives of several national organizations and is widely regarded as the repository for collections of important, little-used materials. It is plausible that this function be extended and provided with support so that this Library serves the field as a "national" library of record in adult education.

d. Program Information. As adult education programs increasingly free themselves from classroom attendance, the profusion of courses, degree programs, programmed learning material, correspondence courses and other educational opportunities makes it almost impossible for the American adult to find the particular course he needs, even when he knows or suspects that it is available somewhere. The need for action on this is apparent. Again, let us suggest that readily-available computer information handling techniques make the potential bulk and impermanence of such information quite manageable. Neither do we doubt that the greater problems of acquiring the needed information and reducing it to meaningful summary form can be attacked with certainty of success. Experimentation should begin now.

6. Long-Range Financial Support.

We know that none of the national agencies or those at other levels in the field have substantial sums available to invest in the establishment of large-scale information services. We are equally convinced from our discussions with them, that they are eager to engage in information work especially directed to their particular clientele groups. If the basic task of acquiring and analyzing the vast flow of adult education literature can be mastered and brought to operational level, it will relieve these agencies of this burden and provide the basic tools with which they can develop and expand the services they deem appropriate.

Some parts of the cost of useful information services can

probably be recouped from carefully devised sale of services, but the high costs of initial acquisition and analysis cannot be supported by the profession at the present time.

These factors indicate that the federal government is the most probable source of support for the initiation of services and for maintaining the basic tasks of acquisition and analysis. We recommend such investment as one of the best ways of supporting the adult education programs, which show so much promise in aiding in the solution of some of the pressing educational problems of the nation. The evolving Educational Resources Information Center of the U.S. Office of Education appears to be one plausible channel for such investment.

It is a pleasure to report that the ERIC Clearinghouse on Adult Education is now at work to provide some elements of the model system. More, by far, can now be done in 1968 than we would ever have dreamed possible when we began our investigations in 1964, for the Educational Resources Information Center represents a resolute effort in the U.S. Office of Education to bolster information services throughout the American educational system, and provides a powerful mechanism for this purpose.

ERIC/AE now acquires, processes and disseminates information about a large flow of current documents in adult education, both those immediately useful in the provision of adult education programs and those contributing to tested knowledge in the field. Any issue of Research in Education will show you some of the products of this effort. Documents are announced to the educational community; many are made available at remarkably low cost by the ERIC Document Reproduction Center; bibliographies and literature reviews are produced; searches are made in local Clearinghouses and may soon be provided centrally; and many other activities are underway.

These document processing activities are the necessary instrumental first steps essential to the development of other information analysis activities of potential great value to the profession. This "processing" is not a simple task; I am weary of hearing it dismissed as "mere document handling," as though we were casually plunking leaflets into the files.

As our National Advisory Board knows from its recent review of the problem, defining the boundaries of adult education in a manner that can be made operational in ERIC/AE is an intellectual challenge of a high order. We must be generous enough in scope to capture the growing edges of the field without letting the collection disperse into a motley assortment of documents so diffuse that it is relatively useless for any purpose.

Similarly, the use of coordinate indexing, based on a thesaurus of structured vocabulary for consistent retrieval of documents by specific topic, presents complex problems of interest and consequence to the profession. About these and other aspects of ERIC/AE work you will hear more, for even with the help of an alert Advisory Board, we cannot and should not confront these tasks without involving many of you whose professional work is certain to be affected by the decisions we make.

No one in ERIC claims that we have solved all these problems, but we have grasped them firmly enough to get the network into vigorous operation. At ERIC/AE we have abstracted some 1700 documents in the past two years. We are making these known to the field through a series of publications called "Current Information Sources" which makes abstracts on particular subjects available in convenient form, and Research in Education.

You would be impressed, if you could see all this information flowing past, by the array of new ideas surging up from the field and by the growth of systematic research and investigation in many areas. Our document store is constantly being augmented. Today, for example, a microfiche collection has arrived in our office representing roughly $100,000,000 of educational research funded during the past decade by the Cooperative Research Program; it includes some of the best research ever done in adult education.

It is not enough to make these documents known through the distribution of abstracts, useful as that is as a first step. You know and we know that effective information transfer from document to practice is more complex than that. The next step, it seems to us, is to engage many agencies and expert individuals in the critical analysis, review and synthesis of the information contained in these documents. These reviews are needed in many areas, both practical and research oriented, from many viewpoints and for many audiences. Here is the area where you as active researchers can make powerful and immediate contributions to the field. ERIC/AE is prepared to

give you every possible assistance.

Since you are involved daily in adult education and are, so to speak, at the heart of the matter, is it possible that your own interests and research projects are in the subject areas where literature or research reviews in one form or another would benefit your colleagues? Very likely, yes. Is there, in fact, any considerable body of writing or information in these subject areas? Often there is much more that you realize, but we will never know unless you bring your interest to the attention of ERIC/AE and set us to searching out the documents.

Remember that much of the practical literature of program planning and administration needs analysis, just as certainly as do the areas of research in which we are primarily interested here. Consider, too, that reviews which digest, synthesize or re-package "what the literature says," are useful, though they are even more helpful if a competent expert presents his own conclusions and comments on the state of our knowledge in his particular interest area. Why wait until that unlikely moment when we can revise the Brunner Overview in one great project? Let us have a profusion of analytical reviews, however modest in scope, for they will cumulate into a significant consolidation of tested knowledge.

Let me suggest some of the forms these reviews might take, citing some familiar models when they come easily to mind.

I hope you recognize the importance of the basic, critically retrospective bibliography and how few of these there are in adult education. These require for their preparation a person thoroughly familiar with the literature of part of the field and willing to assert that he thinks certain works more important than a mass of others. An example is a recent ERIC/AE publication, Basic Information Sources in Evening College Education.

Another type of review focusses on current research and development, in the style of the yearbooks found in psychology and some other disciplines. I am at a loss to think of any example in adult education, though the adult education issues of the Review of Educational Research too infrequently prepared, are possible models.

Interpretations of research in terms meaningful to the practicing adult educator are urgently needed. Researchers were shaken by a jeering and hostile commentary on their work in a recent issue of Adult Leadership, and, if we believe, as I certainly do, that research and practice must come together in a moving equilibrium to advance the field, we must do more articles like George Aker's, "What research says about public school adult education."

Some reviews both summarize what is known and critique the methods we are using. If we would attend to Alan Knox's review of clientele analysis studies, we would stop grinding out these wearisome dropout studies until we find more penetrating methods.

The splendid interpretative essays prepared by the Professors of Adult Education as background for their "black look" provide an example of forays into related disciplines in search of insights useful to adult education.

These are, of course, only a few of the forms research analysis and review may take. Your ingenuity will discover many more. Again, I say, efforts of this type will be useful, though modest in scope.

What are the subjects requiring review and analysis? Almost any you can mention, for our efforts of this type in recent years have been sporadic and inadequate. The Brunner Overview is sadly out of date; the fine Review of Extension Research seems to have lapsed; our issues of the Review of Educational Research are on a three-year cycle and we are threatened with fewer in the future.

Topics for review may be found, for example: (1) in the personal interests of researchers or practitioners; (2) in federally funded programs, for these represent areas judged of high priority in the national interest; (3) in areas of heavy publication, for this presumably indicates interest and readiness for change; (4) in areas near the core of adult education interest, as represented, for example, by the Jensen volume, Adult Education: Outlines of an emerging field of university study; or (5) in systematic efforts to identify research priorities, as, for example, in Burton Kreitlow's, Educating the Adult Educator.

ERIC/AE, when its detailed indexing is operational, should be able to provide a close analysis of volume of publication by subject and by form of document. I think our acquisition is comprehensive enough that this will be a meaningful description of the production of knowledge in printed form, and not just a spurious function of the collection policies of a particular agency or library. We will be able then to monitor the flow of research and to identify areas of redundancy as well as many that are being neglected.

In very imprecise fashion, I can give you even now some rough data on volume of publication in the past two years. The categories are gross and random, since the count has been kept for other purposes. Nonetheless, I know the volume of publication will surprise many adult educators. These counts have been made from a file of about 1600 documents abstracted in 1966 and 1967. These represent what I truly believe to be most of the significant publications of that period; we have routinely screened out about one-third of the publications we judge to be less useful. What proportions of these are research or systematic investigation? Soon we will be able to give you precise figures of this type; for now, I will make a rough guess that it is about 20%.

Reviews of current work could be prepared in any of the following aspects of adult education and ERIC/AE could supply abstracts and documents in support of such work: adult basic education (75 documents);

literacy education abroad (25); community education in the U.S. (90) or abroad (30); higher adult education, U.S. (200) or abroad (15); management development (35); continuing education in the professions (25); residential education (15); training of adult education personnel (80); correspondence study (25); Cooperative and rural extension (75); adult vocational education (125); industrial training (150, including many research studies on methods); programmed instruction (25); education of women (20); education of the aging (15); adult education in various foreign countries. The random nature of these categories is immediately apparent. Shortly, we will be able to search the files by much more detailed topics, so that we could extract, for example, studies dealing with any particular method, sponsoring agency, subject of study, or aspect of program planning.

Finally, let me mention a collection of some 500 documents including all significant research studies we could locate on the learning related characteristics of adults or on the research evaluation of adult teaching methods. This collection is fully abstracted and is not limited to current publications. The Library of Continuing Education of Syracuse University, in which ERIC/AE is located, also possesses almost every dissertation ever done in adult education plus many from related fields, though these unfortunately have not all been abstracted.

ERIC/AE will prepare some of the analytical reviews we are advocating in areas where we have subject experts on our staff. In addition, we offer the great resources of the Clearinghouse and the Library of Continuing Education to our colleagues in the field who may wish to join us in this information analysis work.

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